

Claims;

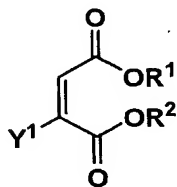
1. A dispersion of colored particles which is prepared by emulsifying a mixture comprising a colorant and polymer by employing a reactive emulsifier, and subsequently copolymerizing the emulsified mixture with a polymerizable monomer.
2. The dispersion of claim 1, wherein the colorant is an oil-soluble dye.
3. The dispersion of claim 1, wherein the colored particles are in a core/shell structure.
4. The dispersion of claim 1, wherein a ratio of a colorant to a polymer is 1 : 0.1 - 1 : 5 by weight.
5. The dispersion of claim 1, wherein the reactive emulsifier comprises a group represented by A, B, or C:
A: a straight chain alkyl group, a branched alkyl group, or a substituted or unsubstituted aromatic group, each having at least 7 carbon atoms,

B: a nonionic or anionic group which results in surface activity,

C: a polymerizable group capable of being radically polymerized.

6. The dispersion of claim 1, wherein the reactive emulsifier is represented by Formula (1),

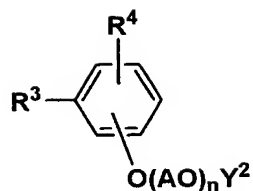
(1)



wherein R¹ represents a straight chain alkyl group or a branched alkyl group having 7 - 20 carbon atoms, or a substituted or unsubstituted aromatic group, R² represents a group having a polymerizable group capable of being radically polymerized, and Y¹ represents sulfonic acid, carboxylic acid or salts thereof.

7. The dispersion of claim 1, wherein the reactive emulsifier is represented by Formula (2),

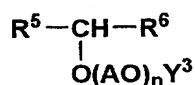
(2)



wherein R^3 represents a straight chain alkyl group or a branched alkyl group having 7 - 20 carbon atoms, or a substituted or unsubstituted aromatic group, R^4 represents a group having a polymerizable group capable of being radically polymerized, Y^2 represents a hydrogen atom, sulfonic acid and salts thereof, or carboxylic acid and salts thereof, AO represents alkylene oxide, and n represents a degree of polymerization of alkylene oxide.

8. The dispersion of claim 1, wherein the reactive emulsifier is represented by Formula (3),

(3)



wherein R^5 represents a straight chain alkyl group or a branched alkyl group having 7 - 20 carbon atoms, or a substituted or unsubstituted aromatic group, R^6 represents a group having a polymerizable group capable of being radically polymerized,

Y^3 represents a hydrogen atom, sulfonic acid and salts thereof, or carboxylic acid and salts thereof, and AO alkylene oxide, and n represents a degree of polymerization of alkylene oxide, and n represents a degree of polymerization of alkylene oxide.

9. The dispersion of claim 6, wherein an average degree n is 1 - 10.

10. The dispersion of claim 6, wherein the reactive emulsifier is anionic.

11. The dispersion of claim 6, wherein a polymer which constitutes colored particles contains an acrylic polymer or a styrene-acrylic polymer.

12. An aqueous ink comprising the dispersion of colored particles of claim 1.

13. The aqueous ink of claim 12, wherein a peak particle diameter of colored particles is at most 50 nm.

14. An image forming method by ejecting an ink onto a image recording member by employing an ink jet recording apparatus wherein the is an aqueous ink of claim 13 is ejected.

15. A preparation method of dispersion of colored particles comprising a second polymer particles containing a colorant wherein the method comprises the steps of;

emulsifying a mixture of a first polymer and a colorant in an aqueous solvent to prepare an emulsion comprising a particle containing the first polymer and the colorant,

adding a monomer to the emulsion, and

copolymerizing the first polymer and the monomer to form the second polymer,

wherein the emulsifying is conducted by employing a reactive emulsifier.

16. The preparation method of claim 15, wherein the colorant is an oil-soluble dye.

17. The preparation method of claim 15, wherein the colored particles are in a core/shell structure.

18. The preparation method of claim 17, wherein a ratio of the colorant to the first polymer is 1 : 0.1 - 1 : 5 by weight.

19. The preparation method of claim 15, wherein the reactive emulsifier comprises a group represented by A, B, or C:

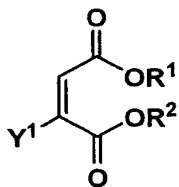
A: a straight chain alkyl group, a branched alkyl group, or a substituted or unsubstituted aromatic group, each having at least 7 carbon atoms,

B: a nonionic or anionic group which results in surface activity,

C: a polymerizable group capable of being radically polymerized.

20. The preparation method of claim 15, wherein the reactive emulsifier is represented by Formula (1),

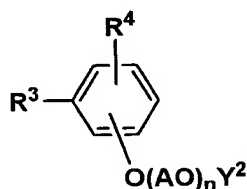
(1)



wherein R^1 represents a straight chain alkyl group or a branched alkyl group having 7 - 20 carbon atoms, or a substituted or unsubstituted aromatic group, R^2 represents a group having a polymerizable group capable of being radically polymerized, and Y^1 represents sulfonic acid, carboxylic acid or salts thereof.

21. The preparation method of claim 15, wherein the reactive emulsifier is represented by Formula (2),

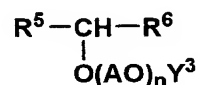
(2)



wherein R^3 represents a straight chain alkyl group or a branched alkyl group having 7 - 20 carbon atoms, or a substituted or unsubstituted aromatic group, R^4 represents a group having a polymerizable group capable of being radically polymerized, Y^2 represents a hydrogen atom, sulfonic acid and salts thereof, or carboxylic acid and salts thereof, AO represents alkylene oxide, and n represents a degree of polymerization of alkylene oxide.

22. The preparation method of claim 15, wherein the reactive emulsifier is represented by Formula (3),

(3)



wherein R^5 represents a straight chain alkyl group or a branched alkyl group having 7 - 20 carbon atoms, or a substituted or unsubstituted aromatic group,

R^6 represents a group having a polymerizable group capable of being radically polymerized,

Y^3 represents a hydrogen atom, sulfonic acid and salts thereof, or carboxylic acid and salts thereof, and

AO alkylene oxide, and n represents a degree of polymerization of alkylene oxide, and n represents a degree of polymerization of alkylene oxide.

23. The preparation method of claim 15, wherein an average degree n is 1 - 10.

24. The preparation method of claim 15, wherein the reactive emulsifier is anionic.

25. The preparation method of claim 16, wherein a polymer which constitutes colored particles contains an acrylic polymer or a styrene-acrylic polymer.